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ABSTRACT

This document contains four papers from a symposium on enhancing workgroup performance in human resource development (HRD). "Formation of Cross-Cultural Global Teams: Making Informed Choices on Team Composition" (Robert L. Dilworth) describes how a mixed class of U.S. and international students identified their cultural and learning styles and learned to form effective diverse teams. In "Current Status of Diversity Initiatives in Selected Multinational Corporations" (Rose Mary Wentling, Nilda Palma-Rivas), eight diversity managers describe the planning, implementation, evaluation, success factors, and barriers involved in their diversity initiatives. "An Empirical Study of the Relationship between Team Process Interventions and Double-Loop Learning" (Laurel H. Jeris) presents evidence that process interventions emphasizing assumptions surfacing, dialog, and reflection helped teams master double-loop learning. In "Goal Condition and Work Group Effectiveness: The Use of Group and Individual Goals for Work Groups Performing Interdependent Tasks" (Mary J. Finegan), a study found that workgroup effectiveness did not differ regardless of whether groups were given individual goals, group goals, or the two in conjunction. (KC)

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27 **Enhancing Workgroup Performance**

Chair: Albert Wiswell, Virginia Polytechnic Institute and State University

Formation of Cross-Cultural Global Teams: Making Informed Choices on Team Composition

Robert L. Dilworth, Virginia Commonwealth University

Current Status of Diversity Initiatives in Selected Multinational Corporations

Rose Mary Wentling, University of Illinois

Nilda Palma-Rivas, University of Illinois

An Empirical Study of the Relationship Between Team Process Interventions and Double-Loop Learning

Laurel H. Jeris, University of St. Francis

Goal Condition and Work Group Effectiveness: The Use of Group and Individual Goals for Work Groups Performing Interdependent Tasks

Mary J. Finnegan, University of Nebraska

ACADEMY OF HUMAN RESOURCE DEVELOPMENT

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March 4 - March 8, 1998
Oak Brook, IL

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Formation of Cross-Cultural Global Teams: Making Informed Choices on Team Composition

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Much is being written about the importance of teams, the advent of self-directed work teams and the importance of multicultural teams as companies become increasingly global. However, beyond an expressed recognition that global teams can have special properties because of their inherent diversity, there has been relatively little focus on how you form and nurture the effectiveness of such teams. How do you go about creating global teams in ways that allow you to capitalize on diversity?

As companies become more global it can be important that team composition reflect the diversity involved. There are several reasons for this and they can directly impact business success:

1. The company must understand the perspectives of the cultures in which they operate and how best to harmonize diverse interests. It is a case of cross-cultural awareness or sensitivity. It is also a way to build cross-cultural competence.
2. Wide differences of cultural perspective or orientation can be better dealt with when individuals from those cultures have an opportunity to work together.
3. Divergent views realized through blending of cultures within a team can spark creativity and build insight that might not materialize in a more homogeneous group.

Because diversity of team composition is functional to a global enterprise, it can be assigned a high priority in the way a company conducts its business.

> The cosmopolitan management team is becoming a familiar sight in global corporations. Whirlpool International's Management Committee is made up of six people from six nations. IBM prides itself on having five nationalities represented among its highest ranking officers and three among its outside directors. Four nationalities are represented on Unilever's board and three on the board of Shell Oil. (Rhinesmith, 1996, p. 158)

If engineered properly in relation to the task assigned to a global team, multicultural team content can produce an advantage.

> The potential productivity of a culturally diverse team is high--they have the additional breadth of resources, insight, perspectives and experiences that facilitate the creation of new and better ideas. Regrettably, culturally diverse groups rarely actualize their potential. (Adler, 1991, p. 141)

Adler's insight, including the failure of many culturally diverse teams to realize their potential, is at the very heart of what seems to constitute a major shortfall in the pursuit of effective global teams. While there are many contributing factors, including ethnocentrism (my way is right and you need to adapt to it), the basic problems seem to lie in inattention to the way you go about mixing diverse cultures and individuals in teams. National culture (now in wain as an influence as regionalism and diffusion of cultural characteristics becomes evident) must be complemented by other understandings. For example, is the culture monochronic (doing one thing at a time) or polychronic (simultaneous occurrence of many things and great involvement with people?) Germany, Switzerland and the United States are monochronic. Others such as

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France, Latin American and the Arab countries tend to be polychronic. (Hall & Hall, 1990, pp.14-16) Mixing the two types without proper cultural sensitivity can be like mixing oil and water. It can lead to the kind of failure Adler alludes to.

Other ways of diagramming cultural differences such as Hofstede's four dimensions (Power Distance, Individualism, Uncertainty Avoidance and Masculinity) isolate other cross cultural differences which relate to ability to deal with ambiguity, how power is viewed and distributed, a collectivistic versus an individual orientation and the degree to which focus is on task versus relationships. Hofstede refers to this as "collective programming of the mind" (Hofstede, 1984, p. 13). People from the United States tend to be quite different from the Chinese in terms of power distance, individualism and long-term orientation. China is much more inclined to autocratic forms of power and hierarchy, much more collectivistic, and is far and away more inclined to take a long view of things. In fact, based on Hofstede's research, China has the longest term orientation of any country in the world. Similarly, Fons Trompenaars has found glaring differences between cultures as well, using a research approach quite different from Hofstede. For example, in asking people around the world "what makes a good manager?", he found that 85 percent of the US sample would opt to be left alone to get the job done, where only 38 percent felt that way in Singapore. (Trompenaars, 1993, p. 143)

Beyond what can be attributed to cultural programming, there are differences between individuals that, while certainly influenced by culture, tend to behave independently (e.g., the propensity to be activistic versus reflective from the standpoint of learning style).

When these various criteria and continua are summed--cutting across all the existing research--it becomes obvious that before simply folding cultures together in a team, there needs to be some kind of scoping that occurs in determining the best mixing and matching of team content. It is not a search for likeness, but rather for a richness of diversity that can spark creativity (if it is a project team that is expected to invent new approaches) and be complementary. Whatever the blend of diversity within a team, there needs to be a conscious effort to help team members: 1) understand their own cultural biases; and, 2) understand the biases of the other cultures and people involved in the team.

The problem in the 1990's is at least two-fold when it comes to cross-cultural teams.

1. There is often no real sizing up of how the people or their cultures mesh. They are often simply thrown together in the belief that diversity must be honored or that it is a good thing to do.

2. There is insufficient effort to spotlight cultural differences as part of global team building, so that team members are psychologically conditioned to capitalize on differences.

As we become increasingly global in our thinking and orient on development of high performing teams, we now need to develop the necessary frameworks for capitalizing on diversity.

> While lower-performing teams were characterized by individuals who collectively could cover only a few of the roles required for effective teamwork, members of high performing teams had strong diversity of roles and complemented each other's differing strengths. (Hoecklin, 1995, p. 115)

Theoretical Framework

The theoretical framework draws from several resources. It is anchored by the two major data bases that exist in terms of multiculturalism from a business perspective. It is indeed remarkable that given the emphasis on globalism and global teams that only two such data bases exist. The first comes from Geert Hofstede and his work with IBM world wide, involving a focus on 50 countries and drawing on 117,000 responses to a 150 question questionnaire (Hoppe, 1990, pp. 7-10). From his research he was able to empirically derive four cultural dimensions.

1. Power Distance (degree of centralization of authority).

2. Uncertainty Avoidance (extent to which a society tends to consider itself threatened by uncertain and ambiguous events).
3. Individualism-Collectivism (some cultures view individualism positively; others view it with disapproval or even contempt).
4. Masculinity-Feminism (the degree of masculinity of a society's dominant values--such as assertiveness, acquisition of money and not caring for others).

To his four basic dimensions, Hofstede later added a fifth--long-term/short-term orientation (Hofstede, 1993, pp. 90-91).

The second major data base relates to the research of another Dutch researcher, Fons Trompenaars, who looked at the impact of culture on business. He addressed about 50,000 questionnaires to managers around the world (Bing, 1995, p. 6). It is interesting to note that unlike Hofstede, who had translated his questionnaire into 20 languages, Trompenaars' questionnaire was only provided in English, arguably creating a bias in relation to the pattern of responses. He used a variety of lens, including "quality of life" (i.e., percentage of respondents opting for individual freedom). This particular question seems to have some parallelism to Hofstede's focus on Individualism-Collectivism. This particular scale compares 38 countries, finding Canada and the United States the most disposed to individual freedom with Nepal the least disposed. France and the United States are far removed from each other on this dimension with 48 percent opting for individual freedom, whereas the US comes in at 79 percent.

The research frameworks of Hofstede and Trompenaars are quite different, except for an individualism-collectivism dimension (Bing, 1995, p. 10). The full range of Trompenaars dimensions are:

1. Relationships with people.
2. Individualism-Collectivism.
3. Neutral versus affective (unemotional versus emotional).
4. Specific versus diffuse.
5. Achievement versus ascription (achievement versus other attributes).
6. Attitudes toward time (relative emphasis on past, present and future).
7. Attitudes toward environment (harmony versus control of the outside world).

Other theoretical reference points used were a study by Hoppe (1990) which uses some of Hofstede's research methodology (with his permission) and adds in a learning style dimension (David Kolb). A shorter instrument, engineered in collaboration with Hofstede by ITAP International in Princeton, New Jersey, called the "Culture in the Workplace" (CW) Questionnaire was also used to gain current insights into how Hofstede's original findings were holding up a quarter of a century later.

A new instrument with a multi-rater (360°) thrust, researched by the Center for Creative Leadership at Greensboro, North Carolina, called "Prospector", was also examined. It has been used in 14 countries with a database after one year of existence just beginning to come together. Finally, the Honey-Mumford Learning Style Questionnaire and its norms (including some that are by profession and national culture) were used to gain insights into individual differences.

Research Questions

1. Is there a better way of determining how to mix and match cultures in global teams?
2. How can the team members acquire a cultural sensitivity to what the diverse properties of the team mean in terms of the potential for elevated performance?

Methodology

The methodology is longitudinal and builds on and extends research effort reported in the 1997 Academy of HRD Proceedings. (See "Bringing Cross-Cultural Sensitivity to Human Resource

Development: An Example from the Classroom). Research effort has been focused on a doctoral level course on Global Human Resource Development taught annually. It commonly has a high density of foreign students mixed in with US students. In fact, the current class is composed of a 50-50 mix. A total of eleven countries have been represented in recent years (China, Saudi Arabia, England, South Africa, Zambia, Malaysia, Egypt, Indonesia, Iran, Costa Rica and Canada).

The classroom has proved to be a rather useful laboratory for such research and the research inquiry has been aimed at both research questions. This is apparently the only instance in the United States where the "Culture in the Workplace" (CW) survey of ITAP International is being used in a university graduate program. It is primarily used in global corporations incident to expatriation related training programs and is quite expensive. We have been able to acquire it (including machine grading) at modest cost in part because of interest in our research focus.

Students take the CW Survey instrument as well as the Honey-Mumford Learning Style Questionnaire (LSQ) and what is called a Cross-Cultural Assessment Inventory (CCAI). In effect, we end up triangulating the make-up of individuals using three separate and distinct perspectives. The students then have a chance to dialogue deeply and develop a synthesis of what it means. Students are purposely broken down into sub-teams by the professor based on the results, in order to maximize diversity and capitalize on it.

Students also go through some rather involved and realistic exercises where they must mix and match a diverse cultural and learning style inventory to specific tasks to be performed. In one case they match assets to two distinct types of project teams, one focused on strategic planning and the other on management of implementation. They learn in the process that matching must go beyond simple blending of cultural assets and extend to the nature of the task to be performed.

The three reference points mentioned that are purposefully triangulated can be described this way:

1. Culture in the Workplace (CW) Survey. It uses a core set of 24 questions from the Hofstede research. The results provided to students show how they match up as individuals against the United States and five other countries of our selection (Sweden, Germany, South Africa, Japan and Brazil) in the four basic Hofstede dimensions. They also see how the overall class profile matches with these countries. The revelation comes when most find they are more like another country than their own in the various dimensions when they compare the results with the outcome of the original Hofstede study.
2. The Learning Style Questionnaires show the four basic learning styles (activist, reflector, pragmatist, theorist) in terms of individual student strengths versus each (very strong, strong, moderate, low, very low). Some find they are strong or low in several areas. Students consider how they can best employ the mix of learning styles in their sub-groups.
3. The Cross-Cultural Assessment Inventory (CCAI) provides an index to cross-cultural effectiveness (ability to perceive cross-cultural interactions from a more open point of view).

Results and Conclusions

1. Foreign students tend to have a broader range of very strong to strong learning styles than those from the United States (e.g., one Malaysian has very strong learning styles in all four learning preferences. Chinese students have tended to be strong across-the-board. This is rare).
2. Those who have been exposed to multiple cultures tend to be well outside the range of what one might expect to find in their basic culture based on Hofstede' cultural dimensions.
3. Use of the Hofstede research results (1980) to typecast people in 1997 is problematic. A current CW Survey result can be at wide variance with the 1980 data even though using the Hofstede based methodology.
4. When people are sensitized to the implications of cultural differences, as done in this "classroom as laboratory" research, they become much more aware of how they need to interact with those from other cultures. It is not a case of trying to interpret differences by formula, but

rather by simple awareness that there are differences and they need to be alert to them and patiently listen.

5. It becomes evident that you need as direct a knowledge of potential team members as you can acquire (e.g., current CW Survey results; awareness of mores; gestures; religion; learning styles; and, specific work background).

6. You intuitively come to believe through observation that diversity in teams provides value added. This is very difficult, if not impossible to prove. It is not something easily subject to control group versus experimental group type analysis. However, the students in the research study talk about the advantage. Whether a result of Hawthorne effect or selective perception (inclined to see positives in this case), there does in fact seem to be a discernible edge over teams from a common culture.

7. Rather than be elegantly academic in how you come up with mixing and matching decisions, simplicity can work best, particularly when you have limited time to make decisions. You can ask the individuals themselves where they fit best, go to third parties and use other resources (e.g., a career record). However, you need to be cross-culturally sensitive. Direct questions, for example, can be viewed as invasive and deeply offensive in some cultures (e.g., the grading of others in how able they are to contribute).

8. You avoid basing decisions re: global team assignments on a single source of information. You need multiple sources and vantage points.

How this research contributes to new knowledge of the field

Research in the area of global team formation, specifically in matching and mixing cultures to team assignments, is sketchy, at best. As indicated, there are only two major data bases to turn to (Hofstede's and Trompenaars) and both are flawed. Hofstede's research seems to have construct validity but the way the sample was drawn is questionable–one company and primarily middle class respondents. Trompenaars' questionnaire was only available in English. The limited re-study by Hoppe in 1990 focused on an elite class (essentially chief executive officers of companies) in 17 of the 40 countries included in Hofstede's basic research.

While there is much being written on the global arena and the role of HRD related activities in it, there is a lack of research directed toward how you determine how to allocate diverse cultural assets across teams, and associated steps that need to be taken to bring about the necessary insights within the teams on how to capitalize on such inherent strengths.

Other than the research of Hoppe (1990), the current research underway with students in the global HRD course at Virginia Commonwealth University, is the only known research to juxtapose cross-cultural differences (Hofstede's dimensions) and learning style differences in considering the best way to deal with the composition of global teams.

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Current Status of Diversity Initiatives in Selected Multinational Corporations

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The purpose of this study was to provide information on the status of the diversity initiatives in selected U.S. based multinational corporations. Two methods of data collection were used: semi-structured face-to-face interviews, and document analysis. Eight diversity managers/directors were asked to provide information on their diversity initiatives; the planning, implementation and evaluation of diversity initiatives; factors assisting in their success; barriers hindering diversity initiatives; and future plans for diversity initiatives.

Demographic changes, technological advances, and global competition have forced U.S. corporations to reexamine their policies, programs, and practices. One of the most cited reports on the dramatic demographic changes in U.S. society is Workforce 2000: Work and Workers for the Twenty-First Century (Johnston & Parker, 1987). This report and others (U.S. Bureau of the Census, 1994; U.S. Bureau of Labor Statistics, 1993) indicate that workforce demographic is expected to change dramatically. Demographers have reported that workforce population will include more minorities, varieties of ethnic backgrounds, more aging workers, and people with different lifestyles.

According to Loden and Rosener (1991), this diverse workforce will influence the management of organizations because, for the first time in the United States, managers will face the challenge of dealing with large numbers of diverse groups in the workplace. Therefore, how well organizations deal with the demographic shift of their workforce, from white males to the inclusion of a more diverse workforce, will directly affect their outcomes (Carnevale & Stone, 1995; Caudron, 1992). Managers who want their organizations to remain competitive are concerned about how to implement different programs to incorporate and retain a more diverse body of employees (Jamieson & O'Mara, 1991; Wheeler, 1996). It has become apparent that American competitiveness in the global marketplace will depend on effective human resource development and management (Fernandez, 1993; Winterle, 1992).

Many terms have been used to describe cultural differences in the workforce including cultural diversity, the multicultural workforce, cultural pluralism. However, the most current term used today is diversity. The term, diversity, is more than a name used to describe the presence of multiple cultures in the workforce. Lynch (1989) defined cultural diversity as "the presence within one geographic area of a number of different cultural, linguistic, credal, ethnic, or racial groups" (p. 5). Diversity, in its broader meaning, includes all the ways in which people differ, it encompasses all the different characteristics that make one individual different from another (Griggs, 1995; Hayles & Russell, 1997).

Leaders in some organizations believe that with a diverse employee population, they can better understand customers' needs in ethnic and international markets (Carnevale & Stone, 1995; Baytos, 1995; Griggs, 1995). Researchers have identified a need for studies of diversity in organizations (Battaglia, 1991; Cockburn, 1991; Cox, 1990; Harbeck, 1992; Morrison, 1992; Rynes & Rosen, 1995; Triandis, Kurowski, Gelfand, 1994). Cox (1990) reported that "despite the growing need for understanding the effects of ethnic and racial heterogeneity on organizations, the knowledge base for these issues is appallingly limited" (p. 5). In spite of the rapid growth and interest in diversity, Armitage (1993) stated that "organizations are scrambling to develop diversity programs but find little concrete guidance" (p. 3). Similarly, Noe and Ford (1992) reported that "while training for diversity has increased in popularity, no systematic empirical research regarding the effectiveness of diversity programs has been published" (p. 358).

The purpose of this study was to provide information on the status of the diversity process in U.S. based multinational corporations, to report on the dimensions of the diversity

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initiatives and programs, and to interpret the dynamics of the corporate response to workforce diversity.

Research Questions

This study examined the following major research questions:

1. What are the domestic and international initiatives for managing diversity in corporations?
2. How are the diversity initiatives planned in corporations?
3. How are diversity initiatives implemented in corporations?
4. How are diversity initiatives evaluated in corporations?
5. What factors have assisted in the success of diversity initiatives in corporations?
6. What barriers have hindered the implementation of diversity initiatives in corporations?
7. What diversity initiatives are planned or projected for the future by corporations?

Methodology

This was a descriptive and exploratory study. Two major methods of data collection were used: semi-structured face-to-face interviews and document analysis. The first major method of this study was in-depth, semi-structured face-to-face interviews with workforce diversity manager/directors who are responsible for diversity initiatives in eight selected multinational corporations. Through face-to-face interviews extensive data were collected in order to produce an in-depth understanding of the current status of diversity initiatives in these multinational corporations. The data obtained through the interviews consisted of words in the form of rich verbal descriptions (qualitative data), as well as quantitative data. The quantitative data were utilized to provide the basic evidence, while the qualitative data were used to round out the picture and provide examples. The second major method of data collection used was document analysis. Documents related to the organizational diversity initiatives in the multinational corporations were collected from primary and secondary sources. Documents were solicited from the corporations and from standard literature sources, such as, annual reports, community relations reports, journals, magazines, world-wide-web, newspaper articles, research reports, and diversity-related books. The data obtained from these documents provided insightful and enriched information that was used to confirm and verify the information provided by the study participants during the face-to-face interviews.

The population for this study was composed of the 30 multinational corporations in the State of Illinois listed in the book entitled Directory of Diversity in Corporate America (1994). From those 30 corporations, a sample of eight was randomly selected to participate in the study. The population and sample that was selected for this study was ideal because, in order for a corporation to be included in this directory, it must meet the following criteria: (a) it must have extensive experience with workforce diversity, (b) be multinational corporations, (c) be allocating resources to diversity initiatives, and (d) have launched successful corporate diversity initiatives.

Results

The study participants were asked to describe their domestic and international diversity initiatives. 'Diversity initiatives' for the purpose of this study are specific activities, programs, policies and any other formal processes or efforts designed for promoting organizational culture change related to diversity (Arredondo, 1996).

Domestic Diversity Initiatives. Study participants reported that a total of 116 domestic diversity initiatives are currently in place in their corporations. The majority (88%) of the corporations participating in this study identified 41 or more diversity initiatives. Three of the corporations are utilizing 62 or more diversity initiatives. This study found that the diversity initiatives are being developed in the areas of leadership and management, training and education,

community relations, communication, performance and accountability, work-life balance, and career development.

Leadership and Management. The area in which there has been the greatest effort is in leadership and management. Senior management commitment was identified by all study participants. All of them indicated that senior management played a vital role in establishing workforce diversity in their corporations. They also indicated that their organizations had developed a diversity mission statement and that it was linked to the company's strategic business plan. Over half of the corporations have established diversity councils which represent the top people in the organization.

Education and Training. Diversity training and education were considered the second most common initiative. It was considered important for: awareness and skill building; understanding of managing and valuing diversity; educating employees on cultural differences and learning how to respond to differences in the workplace; understanding of the cultural mix within the organization; and assisting employees in learning about the culture and the community the organization is serving. Half of the study participants indicated that their organizations integrated diversity training into other training programs.

Community Relations. Community relations activities were seen as important by all the study participants. The majority (88%) of the corporations studied provided support for diverse cultural programs and scholarships with a diverse focus. Over half (63%) of the corporations sponsored women and minority associations and educational programs for minorities, and provided corporate funding with a diversity focus.

Communications. There were 14 communication diversity initiatives cited by the study participants. Seventy five percent of the corporations in the study had diversity statements in their annual reports. The majority of the corporations had also published other materials such as, brochures, company newsletter articles, company newspaper articles, calendars, journal/magazine articles, posters, and diversity pamphlets to introduce and explain the company's diversity initiatives. The majority of the study participants also indicated that their CEOs and/or senior managers have issued communication statements on the importance of diversity to the business goals of the corporation in forms of letters, memo, and speeches.

Performance and Accountability. The study participants cited 14 performance and accountability diversity initiatives. The majority (75%) of the study participants stated that their corporations had methods for measuring diversity performance. Over half (63%) of the corporations studied have initiatives dealing with management accountability related to diversity performance. Accountability tools such as 360-degree feedback, employee attitude surveys of management behavior, focus groups, employee satisfaction surveys, exit interviews, former employee surveys, evaluations that incorporate diversity objectives, and self evaluations were also used. Some companies attached a percentage of compensations and bonus directly to the accomplishment of diversity objectives.

Career Development and Planning. There were 13 career development and planning diversity initiatives. The majority (63%) of the study participants indicated having established career development and planning initiatives for women and people of color. Sixty three percent of the corporations had identification processes for high potential women and people of color. The majority (63%) of the corporations had employee networks or support groups that negotiate with senior management on career development and other business issues. Several organizations have succession planning, career counseling, and career development linked to diversity initiatives.

Work-Life Balance. Participants cited 13 work-life balance diversity initiatives. Over half (63%) of the corporations studied offered flexible work arrangements. Flexibility in work arrangements included telecommuting, job sharing, working at home, and part-time work assignments. This workplace flexibility was offered by the corporations to accommodate the diverse needs and lifestyles of their employees. Other benefits such as child care centers, resource, and referral services, relocation assistance, family care leave assistance, elder care referral services, and reimbursement for dependent care were also mentioned.

International Diversity Initiatives. The study participants identified the diversity initiatives their corporations were utilizing for managing diversity internationally. All of the corporations studied are very much concerned about the international dimension of diversity. The international diversity initiatives most frequently mentioned were marketing plans for international customers, worldwide diversity conferences, and diversity education and training. Besides the corporations that are already conducting international initiatives, two were at the planning stage of

international diversity initiatives. The study participants cited ten diversity initiatives currently being implemented internationally. Half of the corporations studied have marketing plans for international customer base. For their organizations to remain competitive, they need to successfully compete for diverse customers around the world. This often requires to alter their products or services. Other international diversity initiatives were: upper mobility of women to leadership positions in all the countries where they have operations; internal consultants in the United States, who travel abroad to help their company find diversity solutions; community involvement programs; and employee temporary exchange program.

Two (25%) of the corporations are in the planning stage of international diversity initiatives. One of these corporations is working with an external consultant in the planning of initiatives for addressing the international market place. The other corporation is in the process of developing instruments that will assist them in identifying the diversity needs of their business internationally. This organization is in the process of planning the international needs assessment process. Once the needs are identified, they are planning to use that information to develop international diversity initiatives. Two (25%) of the corporations are planning to use external consultants who specialize in global diversity to obtain guidance and direction on addressing the international market place and workforce.

Relationship Between Domestic and International Diversity Initiatives. Six (75%) of the study participants agreed that the same values and principles that guided the domestic diversity initiatives should be the ones that also guide international initiatives. Inclusion and full utilization of people were the most frequently mentioned principles that guided both domestic and international initiatives. This meant giving women and minorities the opportunity to contribute and reach their full potential in the corporations. Inclusion and full utilization also meant that corporations should make efforts to bring in the best minds and more creativity regardless of the individuals' social status, race, and gender. Another similarity mentioned between domestic and international diversity initiatives included the adaptation of products and services to satisfy diverse customer wants and needs to be profitable. They also have to adapt their products and services to the different countries' cultures and customers. According to four (50%) of the study participants many countries face similar diversity issues as the ones found in the United States. Gender, culture, job segregation, pay inequity, and limited advancement opportunities are issues that seem to be present in many parts of the world.

Most Effective Diversity Initiatives. The research participants were asked to identify the diversity initiatives that are the most effective in their corporations. Seven (88%) participants indicated that diversity education and training were among the most effective ones. Leadership and management diversity initiatives were also cited among the most effective. It is interesting to note that although the corporations studied are utilizing more leadership and management diversity initiatives than any other type of diversity initiatives, more participants indicated that education and training diversity initiatives were the most effective. Half of the study participants stated that performance and accountability diversity initiatives were among the most effective strategies. Three (38%) of the study participants reported that communication diversity initiatives were among the most effective in their corporation as well. Although many diversity initiatives were identified as effective, many of the study participants indicated that no single diversity initiative or activity, used in isolation is likely to address diversity effectively.

Diversity Initiatives Planning. To plan diversity initiatives, corporations use two methods of needs assessment: formal and informal. Open door policies and different employee groups are used to gather diversity needs for corporations in informal ways. The formal approach includes ten methods. Employee survey is the most frequently used way for determining the needs in organizations, followed by cultural audits, demographic statistics, and focus groups. Other methods used to identify needs described by the participants were: Employee exit interviews, former employee surveys, electronic brainstorming, and research conducted on diversity by external researchers. Once information is gathered from informal and formal methods, the diversity initiatives are planned. Diversity initiatives are planned at two levels. At the macro level, diversity initiatives are planned at the corporate headquarters. At this level, the corporate-wide diversity initiatives are planned between diversity departments and top executives. At the micro level, business unit managers plan their own initiatives based on their needs, but always having as reference the macro plan. Seven (88%) of the corporations had both macro and micro planning.

Implementation of Diversity Initiatives. The data revealed that it was the responsibility of business unit managers to operationalize the corporate guiding principles on diversity and implement them. In all the companies, business unit managers are the primary agents in charge of the implementation of diversity initiatives. However, they have been assisted in the implementation process by diversity councils and task forces; internal consultants; and diversity departments. All of the study participants stated that the diversity departments or units have the most responsibility for assisting business unit managers in the implementation of diversity initiatives. Diversity departments are responsible for overseeing and monitoring the implementation of the overall diversity initiatives. Three (38%) of the corporations use diversity councils or task forces to help business units implement diversity initiatives.

Structure. The organizational structure for implementing diversity initiatives varied among the corporations that participated in the study. However, there were some similarities. Half of the corporations have their diversity departments connected or related to the Human Resource (HR) Function. These companies have their diversity managers/directors report to the highest-ranked person of the HR department, who in turn reports to the CEO of the corporation. Therefore, the leader in charge of the diversity department in these corporations is only one level away from the most important person in the corporation.

Evaluation of Diversity Initiatives. The study participants combined cited 12 methods for evaluating diversity initiatives. A basic theme that emerged from the study participants was that evaluating diversity initiatives effectively was difficult and time consuming. Despite the difficulty of evaluating diversity initiatives, all of the organizations in the study were attempting to measure their effects on employees and the organization. The methods most commonly used were employee surveys and data. Six (75%) of the study participants indicated they used employee surveys, and another six (75%) stated that they tracked employee data to evaluate the effectiveness of diversity initiatives. The majority of the corporations considered their diversity initiatives very effective and as having a positive impact on employees and organizations. The study participants were also able to identify six components of diversity initiatives that are difficult to evaluate. They were: the impact of diversity on the bottom-line, the impact of diversity on productivity, diversity initiatives return-on-investment, behavioral changes, employee attitudes and internal readiness.

Factors Assisting in the Success of Diversity Initiatives. In total, the study participants together cited 108 factors assisting in the success of diversity initiatives. Factors assisting in the success of diversity initiatives were classified into the three different categories: (a) diversity department factors; (b) human factors; and (c) work environment factors. Diversity department had the largest number of factors assisting in the success of diversity initiatives. The most frequently mentioned factors under this category were: have a strategic plan for diversity initiatives; integrate diversity initiatives into the corporate goals and priorities; and implement several initiatives simultaneously. The most frequently mentioned factors under 'human factors' were: recognition that diversity is a business imperative; acknowledgment of the benefits of diversity; people personally committed; and open-minded people. The most frequently mentioned factors under the category of work environment were: (a) have a culture that values diversity; (b) top management support, endorsement, and commitment; (c) recognizing that diversity is more than an HR issue; and (d) have a top-down diversity initiatives' approach.

Barriers to Diversity Initiatives. The corporations participating in the study have faced barriers related to: (a) the work environment, (b) people in corporations, (c) diversity initiatives. Barriers coming from the work environment had the largest number of barriers hindering diversity initiatives. The most frequently mentioned barriers coming from the environment were competing agendas and size and complexity of the corporation. Half (50%) of the study participants identified changes in the economy of the corporations as an important barrier hindering the progress of diversity initiatives. Two (25%) of the study participants identified other corporate policies interfering with diversity initiatives as barriers that hinder the development of diversity initiatives. The study participants cited seven barriers that were categorized under barriers of people in corporations. The most frequently mentioned barriers under this category were: (a) people not understanding the value of diversity, and (b) people not fully supporting diversity. The most frequent barriers mentioned under barriers to diversity initiatives included: (a) difficult to evaluate, and (b) difficult to show return-on-investment. In total, the study participants cited 38 barriers hindering the success of diversity initiatives.

Future of Diversity Initiatives in Corporations. In total the study participants reported nine different future plans for their diversity initiatives. In the future companies are planning to continue to implement their current domestic and international diversity initiatives. The most common future plans related to domestic initiatives included: continue to implement current diversity initiatives, but with more vigor; evaluate diversity initiatives more effectively; and get further recognition for diversity work. The most common future plans related to international diversity initiatives include: continue with current international diversity initiatives, but with more vigor; expand diversity initiatives to other countries; and develop a well structured diversity plan and start implementation.

Discussion

The variety of diversity initiatives described by the diversity managers/directors provides clear evidence that the multinational corporations participating in this study are doing much more than required by law. Companies are implementing diversity initiatives because they increase their productivity, and help them respond to diverse markets in more effective ways. These were the major reasons for companies having diversity initiatives, and these initiatives were not related to compliance.

Even though an inevitable consequence of having operations in other countries is greater workforce diversity (Florkowski, 1997), many business leaders until recently did not perceive this consequence in the same manner. International diversity initiatives have not been a major concern for global corporations. A 1994 survey in which 1,500 managers participated, showed that managing a culturally diverse workforce and understanding the external global environment were not ranked as the most important concerns by any of the companies (Neff, 1995). This study, however, revealed that these corporations are planning, developing, and implementing an impressive number and variety of diversity initiatives not only in the United States but also internationally. Moreover, this study revealed that there is a relationship between domestic and international diversity initiatives. Inclusion and full utilization of people regardless of their background, appreciation of cultural differences, and adaptation of products and services to diverse customers were some of the values or principles identified as commonalties between domestic and international diversity initiatives. Probably one of the fundamental findings of this study is the relationship between domestic and international diversity initiatives. Since the management of international diversity initiatives is a somewhat new approach, previous studies have not specifically focused on the relationships between the two. For the participants of this study, diversity initiatives have been valuable and effective not only within the United States, but also in other countries. Essentially, the organizations in this study seem to see diversity initiatives as a way to maximize their competitiveness. According to Florkowski (1997), global diversity management, for all of its uncertainties, holds the key competitive advantage for companies that seek to enter and succeed in international markets.

Training and education seems to be an essential strategy of managing diversity in multinational corporations. Training and education ranked as the second most commonly used strategy in the category of domestic diversity initiatives and number three for international diversity initiatives. Furthermore, the participants in this study considered diversity training and education initiatives among the most effective types of diversity initiatives. This study revealed that diversity training and education is an indispensable part of the overall corporate diversity strategy.

Educational Importance of the Study

The intent of the study was twofold. First, the study was designed to provide an interpretation of the diversity process within multinational corporations to help educators understand the status of diversity within these organizations. From this study, educators will learn about differences in organizational responses to diversity. They will understand the varying levels of diversity concerns within corporations and the different initiatives that are implemented to address diversity in the workplace. The information on workforce diversity from this study will enable educators to: (a) revise their curricula appropriately to reflect changes in the workplace; (b) identify workable

strategies for accommodating and managing differences in the workplace; and (c) illustrate for their students the continuing impact of diversity on the organizational culture and climate of these multinational corporations. The second intent of this study was to provide information on the status of the diversity process in organizations to decision-makers, such as human resource managers, training and development specialists, and line managers. The information on workforce diversity from this study can be used for benchmarking within their organizations. In addition, this study may aid in the self-reflective process organizations use to assess their current status and assist them in developing strategic plans that address diversity within their organizations. The information from the study may influence the development of a deeper understanding of diversity processes within organizations. This understanding, in turn, may provide insight and direction for improving practice not only in the field of human resource development, but also in other areas of management. The information may encourage or persuade human resource development practitioners or any person in charge of programs dealing with diversity in organizations to: (a) better assess the needs of the employees, (b) improve the design, implementation, and evaluation of diversity efforts, and (c) identify initiatives to improve the management of a diverse workforce.

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An Empirical Study of the Relationship Between Team Process Interventions and Double-Loop Learning

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The primary purpose of this study was to analyze the extent to which team process interventions helped teams to master double-loop learning, and to determine if a particular type of intervention was more effective than others in bringing about double-loop learning. This paper presents empirical evidence that under laboratory conditions interventions played a key role in team learning outcomes. A particular type of intervention that emphasized assumption surfacing, dialog, and learning was related to higher incidences of double-loop learning as defined by Argyris and Schön (1996). These results indicate that traditional approaches to intervening with teams may be insufficient to facilitate double-loop learning.

The complexity of technological, political, regulatory, and social changes confronting most organizations has made organizational change the central strategic management issue of the 1990s. The ability to cope with often dramatically altering contextual forces has become a key determinant of competitive advantage and organizational survival. How organizations respond to these challenges is the subject of a growing literature on organizational learning. Researching how organizations learn is a daunting task because the values, interests, location of power, and capacity within an organization present an overwhelming array of variables to study and manipulate. However, as acknowledged by Marsick and Watkins in a forthcoming literature review (in press), it is a topic that has captured much interest, and scholars intrigued with this emerging field appear to be highly productive (p. 1). They also found that less research is focused on the effectiveness of organizational learning than on the nature of the learning process itself (p. 2). This observation leads to the question of where learning is located within the organization. According to Argyris & Schön (1996), learning is not disembodied; it comes from individuals and teams that learn on behalf of the organization (pp. 5-7). Learning and change are understood through the ways in which organizational members adapt to old ideas or anticipate new ideas, through the existing structures, management practices and assignments, through their training and development opportunities, and from the external environment.

Given the nature of today's organizational challenges, thinking, problem solving, decision-making, and learning on an individual level are no longer adequate. In isolation, individuals are poorly equipped to respond to these complex demands creatively and effectively. As Senge (1990) noted "Team learning is vital because teams, not individuals, are the fundamental learning unit in modern organizations. This is where the rubber meets the road; unless teams can learn, the organization cannot learn" (p. 10). But not just any learning will do. Organizations are facing changes so complex and comprehensive that organizations must learn to become virtual knowledge warehouses in much the same way that leading-edge logistics practices have transformed inventory availability and utilization. That is, knowledge must be created on-line and just-in-time, and be supported by processes that will deliver what is needed, when and where it is needed.

Problem Statement and Theoretical Framework

Most change strategies, in one way or another, intentional or not, are involved in fostering the learning process. But few of them advocate the need to establish a learning mechanism as an integral part of change. The work advanced by Argyris and Schön (1978, 1996) that focused on organizational learning, the work by Senge (1990) on the five key components of organizational learning, the work

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by Watkins and Marsick (1993) that examined organizational learning capabilities and processes, and the work by Redding and Catalanello (1994) that articulated the team learning model are exceptions. A unifying theme of these scholars is that deliberate mechanisms and capabilities must be developed in order to create the conditions and supports for organizational learning to occur in a way that contributes to high performance. Another unifying theme is that "learning" has a qualitative dimension and that all learning is not equal. Argyris and Schön (1996), borrowing from the work of Ashby, articulated the notion of single and double-loop learning. They wrote:

> We borrow the distinction between single- and double-loop learning from W. Ross Ashby's Design for a Brain (New York: John Wiley and Sons, Inc., 1960). Ashby formulates his distinction in terms of (a) the adaptive behavior of a stable system, "The region of stability being the region of the phase space in which all the essential variables lie within their normal limits" (p. 72), and (b) a change in the value of an effective parameter, which changes the field within which the system seeks to maintain its stability. (p. 21)

Thus, double-loop learning can be understood as the result of collective inquiry into the mental models and theories-in-use of everyday experience that produces a fundamentally reframed conceptualization of a given problem. Alternatively, single-loop learning produces solutions that leave theories-in-use and the values that are implicit within them intact. Long ago Drucker (1959) asked two key questions: "Are we doing it right? or Are we doing the right thing?" (p. 241). "Are we doing it right?" is an example of single-loop inquiry and numerous examples of continuous quality improvements provide testimony for changes that are important, but do not alter the organizational theories-in-use. "Are we doing the right thing?" is an example of the type of inquiry that may lead to deeply questioning assumptions of "how things are done around here."

Argyris and Schön's contribution to organizational learning processes, through their definition of single- and double-loop learning processes, provided the cornerstone of this inquiry, which was to examine team learning processes to better understand what expectations, conditions, and supports are necessary to bring about double-loop learning. The effectiveness of several intervention strategies designed to enhance team problem solving and decision making were tested under controlled experimental conditions in a laboratory setting.

Research Questions The study explored the following research questions:

1. Is there a relationship between team process effectiveness and the team's ability to engage in double-loop learning?
2. Are particular interventions more effective in bringing about double-loop learning than others?
3. Do particular interventions alter a team's interaction style?
4. Does the team's interaction style promote or inhibit the team's ability to engage in double-loop learning?

In response to the first two research questions, six hypothesized relationships were stated which positioned the interventions (two of four possible treatment conditions) in pair-wise comparisons as the independent variables and the learning outcome (double-loop learning or not) as the dependent variable. A second set of fourteen null hypotheses explored the third research question. These hypotheses positioned the intervention as the independent variable and the team interaction style (constructive, passive or aggressive), as measured by the Group Styles Inventory (GSI) (Cooke & Lafferty, 1993), as the dependent variable. The fourth research question was explored using three null hypotheses which positioned the team's interaction style as the independent variable and the learning outcome (double-loop learning or not) as the dependent variable. These hypotheses were used to test the relationships between the teams' styles, as indicated on the GSI (Cooke & Lafferty, 1993) and the incidences of double-loop learning achieved by the teams.

Methodology

The study reported here differs from much of the preceding research in this area in that it is laboratory, rather than field based. Organizational research is typically conducted in a field setting

and follows an action research design. Although a laboratory study has significant limitations in terms of generalizability, its utility can be demonstrated if the sample studied is highly representative of the population that would be found in the relevant field setting. The subjects for this study were all working adults, with five to ten years of organizational experience who were pursuing graduate business degrees. Participants were drawn from five graduate business schools in the Chicago area. Five member teams wrestled with two different typical organizational problem situations (Cooke, 1995) under a particular set of interventions guidelines selected from one of four treatment conditions. These four conditions were:

T_1 No intervention (the experimental control)
T_2 Traditional Process Consulting Guidelines (goal clarity, communication, decision making)
T_3 Team Learning Guidelines (assumption surfacing, dialog, reflection on learning)
T_4 Combination Intervention (goal clarity, communication, decision making, assumption surfacing, dialog, reflection on learning).

Research Instruments Three different instruments were used for data collection. Teams explored two problems selected from the Continuous Improvement Situation Participant Booklet (Cooke, 1995). The intervention guides specified the behavioral norms under which the teams operated, and teams reported their perceptions of the team interaction style on the Group Styles Inventory (GSI) (Cooke & Lafferty, 1993).

The intervention guides were developed by this researcher for this project and are conceptually based on the work of Cooke (1992), Argyris (1982), and Senge, Kleiner, Roberts, Ross, and Smith (1994). Understanding group process in terms of two primary components, interpersonal and rational, has a long research tradition. A pathfinder in this area was Maier, who published more than twenty articles on related aspects of group decision making from 1950 to 1965. A research collaborator of Maier's, Hoffman, is also frequently cited in the literature and like Maier has had a major influence on the work of Lafferty and Cooke in the development of numerous simulations and inventories of individual, group, and organizational-level performance. The three categories on the intervention guide used in T_2 and T_4, goal clarity, communication, and decision making, represent the predominant areas of convergence within the literature on facilitating group process (Lee & Freedman, 1984; Schein, 1988; Varney, 1989). Although far from exclusive, lack of attention to these processes has been cited as a chief cause of process loss (Steiner, 1972). The descriptors assigned to each category were selected on the basis of the literature review as principal levers for maximizing the desired behavior.

The major categories on the team learning intervention guide used in T_3 and T_4, assumption surfacing, dialog, and learning, are consistent with the work of Argyris (1970, 1982), Revans (1982), Watkins and Marsick (1993), and Senge et al. (1994). Again, the descriptors assigned to the categories were drawn from the literature and selected on the basis of criticality for double-loop learning. Specifically, the behavioral norms listed on this guide followed Argyris's (1982) template for creating conditions for double-loop learning--that is, to keep the discussion highly focused on the first and second rungs on the "ladder of inference" (as close to the observable data as possible) (pp. 165-174).

These guides were refined in both field and laboratory settings on three occasions. Further consultation with a graphic arts firm, three rounds of revisions, and expert advice from several individuals culminated in a fourth version, which was used for actual data collection.

The Group Styles Inventory (GSI) (Cooke & Lafferty, 1993) is a validated instrument for assessing group interaction styles (Cooke & Szumal, 1994). It is based on the typology of interaction behavior suggested by the work of Maier (1967) and Hoffman (1979). This instrument is a 72-item self-scoring questionnaire which can be administered to team members immediately following a team meeting, simulation, or at designated intervals to an intact work team. When scored, the 72 statements, which respondents evaluate on a five-point Likert scale, are grouped into twelve dimensions of human interaction and plotted on a circumplex. Triads provide the map for interpreting the circumplex through the predominant factors of constructive, passive/defensive, and aggressive/defensive. This particular graphical representation of data transforms the raw scores into normed percentile bands derived from numerous field tests over the life of this instrument. Team members aggregate their individual GSI (Cooke & Lafferty, 1993) results through a simple averaging process to produce a group profile. This group profile reveals a group-level perception of the team

interaction style.

Over 80 teams participated in this post-test only, control group research study that yielded usable results from 61 teams. All team sessions were observed by two experienced process consultants and audio taped for later review. The paper and pencil results of the team sessions were independently coded by several raters for the presence or absence of double-loop learning.

Team solutions were coded as double-loop solutions if they contained evidence of the team having fundamentally reframed (or reformulated) the problem. For example, the first problem asked teams to design a solution to a situation where budget constraints prohibited a full training experience for all existing sales team coordinators. Management wanted to know how to meet the big picture objective, which was not completely obvious, and stay within the budget. Within-frame solutions, among other things, suggested that the number of coordinators be reduced, that a few coordinators receive training and then train the others, and that cheaper training be found. Reframed or double-loop solutions suggested that classroom-based vendor-supplied training be replaced with on-the-job training, that the way the sales teams were currently organized be reconfigured, and that customers and sales teams themselves develop new alliances that would render training obsolete and meet organizational objectives more effectively. The double-loop solutions contained evidence that tacit understandings of common organizational "fixes" were made explicit and challenged, assumptions were surfaced and explored, and experiments were planned to test out possibilities.

The second problem presented in the simulation asked teams to make a recommendation advising for or against leasing a recycling system. The scenario revealed a number of factors that may influence the recommendation, the most prominent of which was the financial impact statement. Although the financial data were correct, they were derived from an analysis of the production process from a limited perspective, as if the recycling system were used incrementally, not continuously. Double-loop solutions included evidence of what Argyris (1982) described as ". . . detection and correction of error. Correction of such error requires the conditions of the good dialectic, which begins with development of a map that provides a different perspective on the problem [for example, a different set of governing variables]" (pp. 104-105).

In coding the solutions for both simulation problems, the focus was on an analysis of the main elements that defined the problem situation, the relations between them, and their characteristics. Double-loop solutions contained evidence of "productive reasoning," whereas those that were not double-loop contained evidence of "defensive reasoning." Argyris (1997) differentiated these two types of reasoning in the following way:

> Productive reasoning is concerned with testing one's claims. It prescribes: (1) make premises explicit, (2) make inferences from the premises explicit, and (3) craft conclusions that are subject to independent test. The second type of reasoning is defensive reasoning. It prescribes: (1) make premises implicit, (2) make inferences from the premises implicit, and (3) craft conclusions that are subject to one's own subjective test. (p. 22)

This quote is simply another way of describing the "ladder if inference" (Argyris, 1982, pp. 470-471), which was a key conceptual model that informed the development of the team learning intervention guidelines for this study.

The experimental results yielded nominal data, the individual cases were independent, and the tests involved four independent treatment conditions. According to Tuckman (1994) and Emory (1985) these conditions call for the use of the Chi-Square (χ^2) Test, a nonparametric test for significance. This statistic (χ^2) compares obtained frequencies to expected frequencies and indicates the probability that they are different (Tuckman, 1994, p. 291).

Results and Conclusions

In response to the first two research questions stated above, teams that received an intervention focused on team learning achieved double-loop learning significantly more often than those teams that received no intervention (T_1), a process consulting intervention (T_2), or a combined intervention of

team learning and process consulting guidelines (T_4). A particularly interesting finding was the smaller but still significant difference occurring between the level of double-loop learning achieved by those teams exposed to the team learning intervention (T_3) and that achieved by the control groups (T_1). While these results suggest that no intervention at all is not as effective as the team learning intervention, teams who received no intervention whatsoever achieved double-loop learning more often than those teams operating under T_2 or T_4. Although the incidences of double-loop learning were not statistically significantly different for groups receiving no intervention (T_1) from those teams that received either a group process intervention (T_2) or a combination of team learning and process (T_4), a researchable possibility remains that a poorly executed or inappropriate intervention may be worse than none at all.

In addition to these results, a review of the audiotapes from the sessions revealed that teams exposed to T_3 considered a broader field of possibilities in how they formulated the problem. A more dynamic process of inclusion-exclusion (what was considered cogent to the problem) was observable, and different and more strategies were expressed. In other words, the intervention seemed to create a different field within which the problem was anticipated and structured by the teams. For example, teams operating under the team learning guidelines acted more quickly than teams under the other three treatment conditions to separate what was known from what was unknown. They honed in rapidly to voice their perceptions and create a shared understanding of the challenge in front of them. The first actions of these teams, and to some extent the teams subjected to the combined intervention, were to separate facts from assumptions and post them on flip-chart paper. Teams operating under the more traditional process consultation guidelines often spent the first few minutes of their meeting time on role definition and problem-solving strategy. These activities seemed to take place in the absence of any discussion about the problem itself. In fact, the problem seemed not to be related to the teams' process approach to the task.

Another interesting characteristic of the teams operating under the team learning guidelines was that they produced many more pages of notes on flip-chart paper than any of the other teams. It was not unusual during the debrief for these teams to walk the whole group through five or six pages of notes that provided a record of their assumption surfacing process. Teams operating under the other three conditions generally posted their recommendations on one page, but did not record the team session in a way that all team members could access throughout the discussion. Even though the teams operating under the process consulting and the combination guidelines were specifically directed to "attend to meeting facilitation (track ideas on flip chart)," the tendency was to have a person take notes in a notebook, read those notes back to the group occasionally when asked, and only post the final recommendations for the debrief at the end of the session.

When asked about this behavior during the debrief, a frequent response from the teams that charted their entire assumption surfacing process was that "things were happening so fast, and everybody was coming up with so many ideas, it was the only way to keep it all together." Teams operating under the other treatment conditions responded that "we were pretty much in agreement, it didn't seem necessary" or "it would have taken too much time, we wanted to spend the time we had on the solution." Although inferences from this behavior are purely speculative, it appears that teams operating under the team learning guidelines produced a richer and more publicly accessible data base from which to make their recommendations. These differences in early problem formulation and information sharing may have been a factor in the level of uncertainty that was perceived in the problem.

In response to the third and fourth research questions, which were intended to be exploratory in nature, teams who reported an aggressive team interaction style on the GSI (Cooke & Lafferty, 1993), achieved double-loop learning more often than those teams who reported either a passive or a constructive team interaction style. No statistically significant relationship was found between the team interaction style and a specific intervention.

These findings, though preliminary, are at odds with many previously published studies (Maier, 1963, 1967; Hoffman, 1979; Hirokawa, 1985, 1988; Kernaghan & Cooke, 1987, 1990; Cooke & Szumal, 1994). These studies went beyond the present one in that they examined not just solution quality but solution acceptance as well. At the risk of oversimplifying the results of these studies, the thrust was that the more constructive the interaction style, the more likely the team was to produce a high-quality solution that was highly accepted by the group. Solution acceptance was not examined

by this study, but solution quality (demonstrated by double-loop learning) was. The findings show that there is a statistically significant difference between the aggressive group interaction style and either the passive or constructive group interaction styles and double-loop learning. Whether or not the aggressive interaction style reported by teams that engaged in double-loop learning interferes with the teams' commitment to their results remains to be examined.

Contributions to Research and Practice

These empirical results strongly suggest that interventions play a key role in shaping team problem-solving and decision-making processes. Departing from the traditional process consultation approach through the use of the team learning intervention produced significantly more incidences of double-loop learning. Given the mandate for learning as a critical competency for today's organizations amid highly uncertain and unpredictable external environments, this study argues for a reconceptualization of both the study of team learning and the practice of supporting and assisting teams in achieving reframed solutions to difficult organizational problems. The results of this study suggest that the extent to which interventions mediate teams' cognitive competencies, and help teams move from unvoiced individual perceptions of a problem to a shared understanding and collective action, may be a determining factor in the depth of the learning outcome.

The results of the exploratory questions posed in this study indicate that teams that achieved double-loop learning perceived their team interaction style as more aggressive than teams that did not achieve double-loop learning. This finding poses a dilemma for those who study team interaction processes and who consult with teams, because the prevailing wisdom and practice strongly links constructive team behaviors to high quality solutions. Few organizational researchers or policy-making practitioners would dispute the need for double-loop learning under certain conditions. However, the degree to which scholars and practitioners continue to espouse currently accepted conceptualizations of productive team behaviors and process interventions that reinforce those behaviors may be at cross purposes to achieving double-loop learning. If further research should continue to support the findings of this study, then there appears to be a great deal of work to do on reframing existing theories of team development, intragroup communication, and group dynamics, and on discovering and rewarding team behaviors that facilitate the achievement of double-loop learning.

Implications for Human Resource Development Practice The possibility that an intervention focusing on assumption surfacing, dialog, and reflection on learning is related to increased incidences of double-loop learning has profound implications for human resource development (HRD) professionals. To the extent that organizations wish to support and develop the abilities of teams to engage in double-loop learning in their quest to become learning organizations, HRD practitioners will be asked to adopt new roles. Although many HRD practitioners have often functioned as trainers in the past, now their challenge will be to prepare and consult with teams that must work as effectively with uncertainty as they do with certainty.

Existing practices regarding team selection, building, role modeling, empowerment, training, performance expectations, rewards, and intervention and consulting skills must be reviewed to discover ways in which they support or deter double-loop learning. Existing organizational frames for productive team interaction, including such constructs as trust, cooperation, safety, openness, and affiliation, may be inadequate to provide a basis for consulting to teams. Supporting teams in a consultative manner, by naming norms (or simply allowing them to persist on a tacit level) that are inconsistent with the level of discomfort that teams may experience as they voice and deeply question assumptions, may do more harm than good.

These results, obtained in a laboratory setting, do not pose a dilemma of generalizability to practitioners as much as one of transferability. Simple generalization of laboratory results to field settings is a risky proposition because field applications present an entirely different set of intervening variables. On the other hand, the issue of transferability has embedded within it 'learning how to learn" questions. Practitioners must ask several key questions of themselves in order to perceptively

evaluate the transferability of these research results. These questions are:

1. In what ways does reconceptualizing team problem solving as three elements (team cognitive competencies, objective elements of the problem, and contextual factors as mediated by the intervention) recast the team learning process in a specific organizational setting?
2. Given the socio-cultural norms of an organization, what issues (power, politics, diversity/team composition) are likely to arise when teams are chartered to tackle strategic issues that require double-loop learning?
3. In what ways do HRD practitioners, as they reflect on their own practice, surface assumptions (governing variables) that may inhibit double-loop learning within the field of HRD?
4. To what extent do HRD practitioners prepare themselves as mentors and role models for achieving double-loop learning?

Suggestions for Future Research Given the limitations of this laboratory study, further research must be conducted to compensate for them. Further research is also needed to build on these findings through more powerful predictive models that link team-level double-loop learning to bottom-line organizational results amid turbulent and unpredictable environmental conditions. Specific recommendations include:

1. Replication of this investigation in field settings, using the intervention guidelines (now revised to be more sensitive to field setting) in real time on actual organizational problems.
2. Field-based studies that test a predictive model for better understanding the influence of existing mental models of team effectiveness on a team's ability to achieve double-loop learning.
3. Research that illuminates best practices for developing team capacity to achieve double-loop learning. Although it may be highly desirable to develop an organization-wide competency in double-loop learning, single-loop learning is often the appropriate and desired skill required to address many organizational problems. A question that remains unanswered, but has loyal followers on both sides of the issue, is: Does an organization build capacity for double-loop learning by increasing skills in single-loop learning, or do high skill levels in single-loop learning actually inhibit the possibility for double-loop learning to occur?
4. Empirical analysis to further define individual, team, and organizational variables that may be related to the successful development and deployment of the capacity to achieve double-loop learning at the team level.
5. Comparative studies of a variety of HRD approaches to preparing and supporting teams that are chartered to address problems that may require double-loop learning.
6. Operationalize double-loop learning, not as a rare event but as a desired organizational capability, and develop a predictive model that links three primary variables: degree of unpredictability and turbulence in the environment, capacity of teams to engage in double-loop learning, and effectiveness of the role of HRD to support and develop the capacity for double-loop learning at the team level.

Upon more firmly establishing the constructs defined in this study, it will be possible to investigate their specific effects within organizations. A small but growing number of researchers of organizations and organizational behavior are increasingly realizing the importance of understanding the context within which organizations operate and the behaviors that manifest themselves at different organizational levels. Thus, the findings contained within this study should be further examined to determine how they interact at levels varying from the individual to the team to the organization and how these interactions affect the capability of the organization to learn.

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Goal Condition and Work Group Effectiveness: The Use of Group and Individual Goals for Work Groups Performing Interdependent Tasks

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Thirty-three natural work groups in a large "package delivery" organization were used to test the differential impact of goal conditions (i.e., individual goals, group goals, and individual goals given with group goals) upon workgroup effectiveness. The study proposed that work groups given individual goals in conjunction with groups goals would be significantly more effective than work groups given individuals goals and work groups given group goals. The findings demonstrated that goal condition did not differentially affect workgroup effectiveness.

For the past two decades, there has been a dramatic increase in the use of groups to perform work in American organizations. In 1995, it was reported that 90 percent of Fortune 1,000 companies utilize some form of employee-participation workgroup (Lawler, Mohrman, &Ledford, 1995). Since work groups have been identified as an integral link between the individual and the organization as well as being essential building blocks in organizations (Goodman, Ravlin, & Schminke, 1987), there has been an urgent need to identify techniques that increase group effectiveness. The present study suggests that goal setting with the appropriate goal conditions is a much-neglected technique that can enhance group effectiveness by increasing group member effort and appropriate strategy selection.

Although, the goal-performance relationship is well documented (e.g., Locke & Latham, 1990), it has been largely overlooked as an approach for improving group effectiveness. This may be due to the fact that despite the preponderance of interdependent tasks in organizations, most goal setting research has either focused on individuals performing individual tasks (Locke & Latham, 1990) or groups performing independent tasks (e.g., Locke & Latham, 1984). Consequently, the findings from these studies may not be generalizable to group members working on interdependent tasks. Furthermore, few field studies have compared the impact of goal condition (i.e., individual goals vs. group goals) on work groups performing interdependent tasks. The purpose of the present study is to determine if goal condition differentially affects group effectiveness for work groups performing interdependent tasks. A study of the goal condition-group effectiveness relationship may reveal the type of goal conditions that would best serve MBO programs for groups.

Theoretical Background and Hypotheses Development

The propositions for the present study are drawn from several theoretical frameworks. These include goal setting theory, Hackman's "model of work group effectiveness," and social loafing theory. The literature for each framework is briefly reviewed next.

Goal Setting Theory. Goal setting theory is a cognitive theory of motivation based on the assumption that people have desires that can be thought of as specific goals they hope to obtain (Locke, 1968). Support for goal setting theory appears in literature reviews, meta-analytic reviews and surveys of subject matter experts (e.g., Lee & Earley, 1988; Locke & Latham, 1990).

Goal setting affects performance through the direct mechanisms of persistence, direction, and effort and the indirect mechanism of strategy choice. Recently these four mechanisms have been collapsed into two categories, motivation and development of task strategies (Earley, Connolly, & Ekegren, 1989). Motivation includes persistence, direction, and effort and strategy choice involves the development of plans or strategies to perform a task. The following discussion explains how motivation and strategy choice mediate the goal - performance relationship.

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Motivation. Persistence, direction, and effort are direct mechanisms that work together to affect the influence of goals on action. Goals affect intensity by regulating the intensity of effort that the individual exerts on the task. Goals influence duration by leading people to persist in their actions until the goal is attained. Goals affect direction by leading people to direct attention to achieving goals and to take action using goal-relevant activities while ignoring non-goal relevant activities.

Persistence is the duration of effort maintained over time. Since individuals can persist for many hours on a project but exert minimal effort or exert high effort for only a short time, persistence is considered different that effort intensity. Research has revealed that specific, difficult goals lead individuals to persist longer at a task than easy goals (e.g., Bavelas & Lee, 1978).

Direction can be defined as the focused attention of effort toward the goal-related activity (Locke & Latham, 1990). Goals are used to direct attention and action. In order for goals to influence action, they must direct the effort intensity and effort duration toward some activity. First, goals must move the individual toward goal-relevant activities and move the individual away from goal-irrelevant activities. Secondly, goals must influence how the individual activates the knowledge and skills that are needed to attend to the task.

Effort is the third direct mechanism that impacts how goals affect action. Level of effort and arousal are contingent upon the demands placed on an individual who has accepted the demands. When a task requires substantial amount of resources, individuals have to use most of their effort on that task, leaving few resources to use for other tasks. On the other hand, when a task is less demanding, individuals can exert less effort and use the remaining resources to accomplish other tasks. However, greater effort results in greater performance only when there is adequate ability (Kanfer, 1987). That is, if individuals do not have the ability to perform a task, no amount of effort will lead to greater performance.

Strategy Development. Although persistence, direction, and effort have been described as the key motivational mechanisms of goal setting, these mechanisms are not always sufficient to attain a more complex goal. The stimulation of strategy development, an indirect mechanism of goal setting, may also be required (e.g., Earley & Perry, 1987).

Strategy development for tasks is not necessarily automatic and may require conscious problem-solving and creative innovation. Research has demonstrated that when individuals are given a goal, they will develop a strategy to reach this goal (e.g., Buller & Bell, 1986). Although difficult and specific goals are associated with appropriate strategy selection and performance improvement (e.g., Earley, Wojnaroski & Prest, 1987), the goal-performance relationship is influenced by the degree of task complexity, experience with the task, and the level of pressure to perform immediately (Locke & Latham, 1990). For instance, "specific, hard goals" may prod the individual into a chaotic search to find a strategy that may get instant, but inadequate results. On the other hand, a "moderate or a do your best goal" may prompt the individual to take his/her time in selecting a more appropriate task strategy which may lead to better performance.

Although it is well known that goal setting improves individual performance by influencing the individual's direct and indirect mechanisms of motivation and strategy choice, the impact of goals on group performance has not yet been clarified.

Group Effectiveness. Many group models have contributed significantly to how group effectiveness is considered (e.g., Steiner, 1972). Yet, it is Hackman's (1983) "model of work group effectiveness" that illustrates the importance of effort and strategy selection for group effectiveness. Hackman's model is based upon the integration of the small group behavior and job design literature. Hackman proposes that group effectiveness is a joint function of certain group member elements: effort, knowledge, skill, and appropriate strategy selection. Hackman suggests that inputs that increase group member effort and appropriate strategy choice will increase the likelihood that a group will be effective.

Social Loafing and Effort in Groups. Research has indicated that the "group goal-performance" relationship is partially mediated by the amount of effort that group members exert to accomplish the task (e.g., Weldon & Weingart, 1988). However, in order for group members to exert sufficient effort to accomplish a task, social loafing must be eliminated in groups (Hackman, 1990). Social loafing is the decrease in individual effort when individuals work in groups (Latane, Williams & Harkins, 1979). It is assumed that group members engage in a social comparison

process when assessing the feedback they receive about their individual performance as well as their group's performance. After determining the gap between the goal and the feedback information, the group members decide to increase their effort only after they assess past effort and performance in relation to that of other group members.

The social loafing findings indicate that the tendency for individuals to reduce their effort in groups has been associated with a lack of identifiability of individual outputs, (e.g., Harkins & Petty, 1982), a lack of evaluation for individual outputs (e.g., Harkins & Jackson, 1985), feelings of inequity (e.g., Kerr, 1983), and perceptions of indispensability (e.g., Comer, 1991). These findings suggest that individual goals and feedback provided to group members may increase identifiability, evaluation potential, and feelings of equity thereby reducing the group members' inclinations to loaf.

Effort and Strategy in Groups. Although Hackman (1990) suggested that group performance depends upon both sufficient effort and appropriate strategy selection, few studies have investigated the impact of goal condition on group member effort and strategy selection. Most of the research on group goal setting has been focused on either a comparison of difficult goals with easy goals (e.g., Klein & Mulvey, 1989) or a comparison of the presence of a goal with the absence of a goal (e.g., Weingart & Weldon, 1991). Although the few studies that have compared the effects of goal conditions on group performance have been conducted as laboratory studies, many have demonstrated that individual goals given in conjunction with group goals is associated with positive performance (e.g., Gowen, 1985-1986).

A few reasons have been cited to explain the benefits of giving both group and individual goals to groups. First, Matsui, Kakuyama, & Onglatco (1987) suggested that individual goals may increase identifiability and prompt group members to increase effort even if their group goals were met. On the other hand, individuals who are on target for their individual goals but not for their group goals, may feel indispensable and therefore they may work harder to achieve the group goals. Thus, giving individual goals in combination with group goals may reduce a group member's inclination to loaf.

Secondly, Mitchell and Silver (1990) found that the subjects in the "individual goal and group goal" condition (IG/GGC), the "no-specific goal" condition (NSGC), and the "group goal" condition (GGC), were twice as likely to use cooperative strategies than the subjects in the "individual goal" condition (IGC). Furthermore, the subjects in IGC, NSGC, and GGC performed significantly better than the subjects in the IGC. The subjects in the IG/GGC outperformed all other goal conditions but were only significantly different from the IGC. The researchers noted that the selection of an appropriate cooperative strategy may serve as a feasible explanation for the differences in performance. Similarly, Crown and Rosse (1995) found that subjects in the "individual and group goal condition" had a strong orientation to maximizing group performance and were most likely than subjects in any other goal condition to use a cooperative strategy rather than a competitive strategy. The researchers suggested that the use of group goals in combination with individual goals, as long as they were not conflicting, may increase the likelihood that group members use a cooperative strategy and exert sufficient effort on interdependent tasks.

Goal Commitment. The strength of the relationship between goal commitment and performance is purported to be contingent upon the amount of variance in goal commitment (Locke, Latham, & Erez, 1988). Locke and Latham (1990) noted that goal commitment refers to an individual's attachment to, or determination to reach a goal and a resistance to altering the goal at a later time. At the individual level, researchers believe that the determinants of goal commitment include: authority, peer influence, external rewards, participation, competition, expectancy and internal rewards (e.g., Locke et al., 1988). For groups, commitment to a group goal refers to the feeling of attachment that group members have to the group goal and the determination that the group members have in attaining the group goal (Klein & Mulvey, 1989). Therefore, it would seem likely that when a group is committed to its goals, it will be effective. Hollenbeck and Klein (1987) proposed that social influence with respect to other's performance, other's goals, and other's goal commitment may have a strong impact on goal commitment.

Matsui, et al. (1987) revealed that individual goals given in combination with group goals induced a higher level of goal commitment than either giving just a group goal or just an individual goal. This finding may be explained by the assumption that group goals may become commitments that bear responsibilities, thus creating social pressure to perform (Bandura, 1986).

This phenomenon may also be explained by the social loafing research which has found that group members who perceive that their co-workers are not willing to commit themselves to the task are inclined to decrease their own contributions to the task (Veiga, 1991). Consequently, group performance may decrease if group members do not demonstrate that they are committed to the group goal. Therefore, a goal condition that elicits social pressure amongst group members may increase commitment towards the group's goal.

Hypotheses

Since sufficient effort has been identified as integral to group performance (Hackman, 1990), the reduction of effort by work group members should have a negative effect on group productivity. The potential for evaluation in the form of individual goals and feedback has been shown to reduce a group member's inclination to loaf (e.g., Harkins & Petty, 1982). Thus, the use of individual goals and feedback may increase the chance that individuals will exert sufficient effort to accomplish a group task.

Using individual goals alone, however, may not be the best goal condition for interdependent work groups. In order to be effective, work groups performing interdependent tasks not only require sufficient effort but they also require cooperative strategies. Therefore assigning a group goal to interdependent work groups should result in the development of cooperative strategies (Mitchell & Silver, 1990). Thus, both individual goals/feedback and group goals/feedback are needed to increase the likelihood that group members exert sufficient effort and select appropriate strategies to accomplish interdependent tasks. Thus,

Hypothesis 1: Goal condition will differentially affect work group effectiveness.
Hypothesis 2: The group in the "individual goals/feedback and group goals/feedback" condition will have the greatest level of work group effectiveness amongst the three goal conditions.

The relationship of goals to performance has been noted to be contingent upon the amount of variance in goal commitment. It is expected that the more the workgroup members are committed to their goals, the greater the effect on workgroup performance. Consequently, those inputs that increase goal commitment for workgroup members will increase workgroup performance. Thus, it is essential to understand the type of goal that most positively impacts group member goal commitment. Research suggests that individual goals given in conjunction with group goals may increase goal commitment by providing specific standards and instilling a responsibility to all group member (e.g., Weingart & Weldon, 1988). Therefore,

Hypothesis 3: The group in the "individual goals/feedback and group goals/feedback" condition will have the greatest goal commitment level amongst the three goal conditions.
Hypothesis 4: Goal commitment will be positively associated with work group effectiveness.

Method

Design. In order to test the hypotheses proposed, a MANOVA was performed on four dependent variables: pieces per hour (pph), scan percentage, turnover and job satisfaction. The independent variable, goal condition was a between-subjects factor with three levels: (1) individual goals/feedback, (2) group goals/feedback, and (3) individual goals/feedback and group goals/feedback. Each of the 33 work groups was randomly assigned to one of the three goal conditions. To assure equal number of groups in all treatment conditions, a block randomization method was used. The study lasted four weeks.

Site, Subjects, and Tasks. The present study was a field study conducted at one Midwestern site of a major transportation company. Participants consisted of 33 pre-existing work groups, comprised of eight to twelve employees, and managed by one supervisor. Each work group's task consists of both interdependent and independent features. Similar to a

basketball team, the workgroup members have to work alone on some tasks and work together on others. Each workgroup is responsible for sorting, scanning, loading, and dispatching up to 10,000 packages daily. The subjects (n = 395) were primarily male (72.8%), between the ages of 19 and 33 years of age (76.9%) and have worked in their present work group between a month and one year (70.5%).

Procedure. Each of the 33 supervisors posted their work group's goals and feedback on Wednesdays and Fridays for four weeks. These postings were placed on boards that were hung directly in the workgroup area. Depending upon the goal condition that the workgroup was assigned to, the board contained (1) individual goals/feedback, or (2) group goals/feedback, or (3) individual goals/feedback and group goals/feedback.

In addition to the public posting of goals/feedback for each workgroup, the supervisors were instructed to verbally review the goals/feedback with the workgroup as a group during a standard "three minute information session" provided to all work groups on Wednesdays and Fridays.

On the last day of the four- week study, a questionnaire was administered to all the workgroup members to assess goal commitment and job satisfaction.

Workgroup Effectiveness. Since the use of productivity measures rarely tells the whole story about workgroup effectiveness (Hackman, 1990), the present research used both socio-emotional and productivity measures to determine workgroup effectiveness: pieces per hour (pph), scan percentage, turnover and job satisfaction. All four dependent variables were calculated over a four-week period.

PPH. Workgroup pph was defined as the ratio of total number of packages handled to the number of man-hours used.

Scan Percentage. Package scan percentage was defined as the ratio of packages that the workgroup scanned to the total number of packages that the workgroup loaded. This ratio was converted to a percentage.

Turnover. Voluntary turnover was defined as a ratio of total number of employees who voluntary resigned to the total number of workgroup members. The ratio was converted to a percentage and then reverse-coded.

Job Satisfaction. Job satisfaction was defined as an overall measure of the degree to which the employee was satisfied and happy with the job. To assess job satisfaction, three items were taken from the "general satisfaction" scale of the Job Diagnostic Survey (Hackman & Oldham, 1974). Scores for job satisfaction were collected from individuals, aggregated to the group level and averaged for a group score. This questionnaire was administered at the end of the study.

Independent Variable-Goal Condition. There were three goal conditions used in this study: individual goals/feedback (IGs) condition, group goals/feedback (GGs) condition, and individual goals/feedback and group goals/feedback (IGs + GGs) condition. The IGs condition included load pph, scan percentage, and belts stops. The GGs condition included workgroup pph, scan percentage and workgroup belts stops. The IGs + GGs condition included pph, scan percentage, and belts stops for both the workgroup and the workgroup members. All goal conditions required bi-weekly postings and verbal statements of the goals and the feedback.

Goal Commitment. To reflect the three goal conditions used in the present study, goal commitment was measured with three versions of Hollenbeck's et al. (1989) seven-item goal commitment scale. Examples of items used on this version are "I am strongly committed to achieving my individual goals;" "It wouldn't take much to make me abandon my group goals." All items were scored on a five point Likert-scale. Scores from the questionnaire for goal commitment were collected from individuals, aggregated to the group level and averaged for a group score. This questionnaire was administered at the end of the study.

Results

Statistical Tests of the Hypotheses. To test Hypotheses 1 and 2, which states that "goal condition will differentially affect group effectiveness" and "the group in the individual goals/feedback and group goals/feedback condition will have the greatest level of workgroup effectiveness amongst the three goal conditions," a MANOVA was conducted. The results were

found not to be significant ($p < .05$) through the use of three multivariate tests-of-significance (See Table 1). In addition, univariate F-tests were utilized to analyze the dependent variables. These F-tests did not reach the .05 significance level (see Table 2).

Four separate ANOVAs, one for each dependent variable, revealed F ratios of non-significance ($p < .05$). A multiple range test was used to test the difference between groups. The Tukey-HSD procedure showed that no two groups were significantly different at the .05 level. Table 4 provides the means scores for each dependent variable.

Table 1.
MANOVA Tests - Of - Significance

Test Name	*F Value*	*Sig. Of F*
Pillais	0.14	.84
Hotellings	0.15	.85
Wilks	0.87	.85
Roys	0.11	

Table 2. Univariate F-Test Results

Dependent Variable	*F Value*	*Sig. Of F*
Job Satisfaction	1.21	.31
Scan %	0.41	.69
Turnover	0.28	.66
PPH	0.37	.76

Table 3. Mean Scores for Variables by Goal Condition

Goal Condition	*Job Sat*	*Scan %*	*Turnover*	*PPH*	*Goal Com*
IG	10.17	74.11	88.81	162.78	28.60
GG	10.65	70.14	88.70	166.75	27.23
IG + GG	9.89	72.96	85.28	156.26	26.34

Note. Total N = 33; n = 11 for all cells.

For hypothesis 3, a one-way ANOVA was performed for goal commitment. For the average goal commitment score, there was no significant difference across goal conditions, F (2, 30) = 2.03, $p < .15$. Table 4 shows mean scores for goal commitment by goal condition.

Concerning Hypothesis 4, goal commitment was not significantly associated with workgroup effectiveness ($r = .09$, $p = .60$). In addition, goal commitment was significantly associated to one of the four dependent variables, job satisfaction ($r = .45$, $p < .01$).

Discussion

The purpose of the present study was to examine the goal-performance relationship for work groups. The hypotheses that "goal condition will differentially affect workgroup performance" and that "groups given individual goals in combination with group goals will have the highest level of workgroup effectiveness" were rejected.

One implication for these findings may be that although all the work groups had the same roles and tasks, their goal conditions may have led them to different conclusions about how to perform their jobs. According to Shea and Guzzo (1989) even in identical technological environments, groups will differ in their degree of task independence, because the amount of cooperation and exchange that occurs is under the control of the group members. Thus, the lack of impact of goal condition on group effectiveness may be due to the idea that goals acted as instructions that defined the level of interdependence among group members. For instance, when workgroup members were given individual goals they may have exerted more effort but may have engaged in less cooperation with other group members, creating a less interdependent task. Yet, when workgroup members were given group goals, they may have executed more cooperation but less individual effort, creating an interdependent task. Finally, when group members were given

both individual goals and group goals they may have created a moderately interdependent task by using a cooperative strategy at times and increasing individual effort when necessary. Thus, future studies need to determine if goal condition differentially affects how work groups perform a task.

The third hypothesis which stated that "the group in the individual goals/feedback and group goals/feedback condition will have the greatest goal commitment level amongst the three goal conditions" was rejected. A reason for this may be that different goal conditions may have lead to differences in the way group members performed their task which in turn may have equalized the amount of goal commitment amongst the goal conditions. For instance, groups in the IGs condition set up their task to be independent and therefore the individual goals provided a means to eliminate social loafing and thus resulted in a commitment to individual goals. The groups in the GGs may have set up their tasks for cooperation and collaboration. Thus, they may have felt a social responsibility to the group, which may have resulted in commitment to group goals. The groups in the IGs +GGs may have set up their task to be moderately interdependent warranting an equal commitment to both group goals and individual goals. If this were true, then giving groups IGs +GGs instead of just IGs or GGs would not significantly increase the level of goal commitment.

Previous research has demonstrated a direct causal relationship between goal commitment and performance. Yet, Hypothesis 4, "goal commitment will be positively associated to workgroup effectiveness," was rejected. Two alternative possibilities may explain these results. First, an accurate level of goal commitment may not be calculated by aggregating individual goal commitment scores to the group level. Secondly, since goal commitment may be continually adjusted as a function of information about the direction and the magnitude of performance levels (Vance & Collella, 1990), it is feasible that the gaps between actual performance and goals resulted in the goals being rejected. Since work groups given both individual goals and groups had twice the amount of goals and feedback then the other goal conditions, they had twice as much feedback about their performance and thus may have rejected their goals more often.

In conclusion, this research sought to determine if goal condition affected work group performance. Unlike prior studies assessing the impact of goal conditions, the present study used natural work groups in a field setting and found that goal conditions were not differentially associated with work group effectiveness. However, some limitations need to be mentioned. First, although the sample size was adequate for statistical examination, it can be argued that a larger sample size may have lead to significant results for some of the hypotheses (3 & 4). Secondly, since the workgroup's task was moderately complex, the generalizability of the findings is limited to workgroups engaging in moderately complex tasks.

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